WHAT IS CLAIMED IS:

1. A device for sensing pressure comprising:

a pressure port defining a inlet channel;

a diaphragm located at an end of the inlet channel;

a header assembly coupled to the pressure port defining a reference pressure chamber on an obverse side of the diaphragm from the inlet channel, wherein the header assembly comprises pass-through electrical connections to communicate electrical signals from inside the reference pressure chamber to outside the reference pressure chamber; and

an interface board located in the reference pressure chamber configured to connect one or more sensing elements in the reference pressure chamber to the pass-through electrical connections of the header assembly.

2. The device of Claim 1, wherein the interface board further comprises:

a set of electrical connection pads, wherein each sensing element is electrically coupled to the interface board at an electrical connection pad;

a set of sockets; and

traces connecting the set of electrical connection pads to the set of sockets.

3. The device of Claim 2, wherein the pass-through electrical connections are pins and wherein the set of sockets are configured to interface with the pins.

4. The device of Claim 3, wherein header assembly further comprises a shell and glass-to-metal seals between the pins and the shell.

5. The device of Claim 4, wherein the header assembly is hermitically sealed to the pressure port.

6. The device of Claim 5, wherein the reference pressure chamber has a pressure of below 5 mTorr.

7. The device of Claim 3, wherein the one or more sensing elements are wirebonded to the electrical connection pads.

8. The device of Claim 2, wherein the reference pressure chamber is open to the atmosphere.

9. The device of Claim 1, wherein the diaphragm and pressure port are an integral machined component.

10. The device of Claim 1, wherein the diaphragm is coupled to the pressure port.

11. The device of Claim 1, further comprising a bracket, wherein the interface board is coupled to the bracket and the bracket is coupled to the pressure port.

12. A device for sensing pressure comprising:

a pressure port defining a inlet channel;

a diaphragm located at an end of the inlet channel;

a header assembly hermetically sealed to the pressure port defining a reference pressure chamber on an obverse side of the diaphragm from the inlet channel, wherein the header assembly comprises:

a shell;

pins to communicate electrical signals from inside the reference pressure chamber to outside the reference pressure chamber; and

glass-to-metal seals insulating the pins from the shell;

a set of piezioresistive strain gauges responsive to flex in the diaphragm;

an interface board located in the reference pressure chamber connected to the set of piezoresistive strain gauges and the pins, wherein the interface board is configured to interface the strain gauges with the pins.

13. The device of Claim 12, wherein the interface board further comprises:

a set of electrical connection pads, wherein each piezoresistive strain gauge is electrically coupled to the interface board at an electrical connection pad;

a set of sockets to receive the pins; and

traces connecting the set of electrical connection pads to the set of sockets.

14. The device of Claim 13, wherein the set of piezoresitive strain gauges are wirebonded to the electrical connection pads.

15. The device of Claim 14, wherein each of the electrical connection pads is gold and the traces are palladium/silver.

16. The device of Claim 12 further comprising a bracket coupled to the pressure port and the interface board, wherein the bracket offsets the interface board from the diaphragm.

17. The device of Claim 12, wherein the reference pressure chamber has a pressure of below 5 mTorr.

18. A method of interfacing sensing elements comprising:

electrically coupling a sensing element to an interface board at and electrical connection pad, wherein the sensing element is responsive to an amount of flex in a diaphragm;

electrically coupling a pass-through electrical connector to the interface board, wherein the pass-through electrical connector is configured to communicate signals from inside the reference pressure chamber to outside the reference pressure chamber, and wherein the interface board is configured to interface the sensing element with the pass-through electrical connector; and

at least partially enclosing the sensing element and the interface board in a reference pressure chamber.

19. The method of Claim 18, further comprising coupling the interface board to a bracket and coupling the bracket to a pressure port.

20. The method of Claim 18, further comprising at least partially enclosing the sensing element and the interface board in the reference pressure chamber by coupling a shell to a pressure port.

21. The method of Claim 20, wherein the shell is hermetically sealed to the pressure port.

22. The method of Claim 21, wherein the shell in hermetically sealed to the pressure port through electron beam

welding in a vacuum to create vacuum conditions in the reference pressure chamber.

23. The method of Claim 21, further comprising coupling at least one additional electronic component to the pass-through electrical connector outside of the reference pressure chamber.

24. The method of Claim 18, wherein electrically coupling a pass-through electrical connector to the interface board further comprises aligning a set of pins with a set of sockets and inserting the set of pins into the set of sockets.